Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link-Up	)	WC Docket No. 03-109
	)	

COMMENTS OF THE NEBRASKA RURAL INDEPENDENT COMPANIES

Dated: April 18, 2011

The Nebraska Rural Independent Companies

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SUMMARY OF COMMENTS

The Nebraska Companies submit these comments in response to the February 9, 2011 "Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking" (the "*NPRM*") issued in these proceedings by the Federal Communications Commission ("Commission"). The Nebraska Companies address four matters raised in the *NPRM*.

First, the Nebraska Companies note that, while the *NPRM's* near-term recommendations maintain rate-of-regulation, the Nebraska Companies demonstrate that rate-of-return regulation has clearly had a positive impact on broadband deployment in rural areas and needs to be maintained. Rural telephone companies should continue to be provided with a reasonable opportunity to recover their costs of providing service to these rural areas. Likewise, existing investments must also be recovered based on the fact that such investments were made in reliance on existing Commission rules and regulations; any "mid-course" change in recovery levels and policies would be tantamount to "changing horses in mid-stream;" and any such change would improperly undermine the reasonable and proper reliance upon the existing rules and decisions.

The Nebraska Companies contend that the Commission can achieve its goals of encouraging efficiency and rational investments and operations by rural telephone companies by establishing and implementing reasonable parameters for future universal service fund ("USF") disbursements without undermining the current level of broadband deployment achieved in rural areas through rate-of-return regulation including: (1) combining Local Switching Support with High Cost Loop support in order to support broadband in high-cost areas and (2) proposing adjustments to the Safety Net Additive qualification procedures be made in lieu of the complete elimination of safety net support. At the same time, elimination of corporate operations expense

within the federal USF and Connect America Fund ("CAF") process should be rejected since such expenses are necessary for carriers to deploy, operate and maintain voice and broadband networks. Eliminating this recovery for small and rural carriers will only further reduce these companies' operating cash flows, ultimately leading to a reduction in the human resources necessary to make strategic decisions for network deployment, to operate network upgrades and to conduct the maintenance of the network, all in direct contravention of the ubiquitous broadband deployment goals contained in the National Broadband Plan.

Second, with respect to the Commission's stated objective of encouraging efficiency within the USF distribution process for rate-of-return carriers, the institution of appropriate parameters on the rate-of-return process can be made but should be based on reliable and thorough data as well as the aggregate impact of these changes not only on rate-of-return carriers but also on those carriers operating under price caps. Consistent with this belief, the Nebraska Companies update the Commission with respect to their efforts to develop a capital expenditure regression analysis to estimate capital expenditures, the results of which should prove useful in determining the level of investment by rate-of-return companies. The comments also update the efforts (and need) to develop additional, nationwide data to ensure that the regression analysis is as comprehensive as possible, with detail also provided in Appendix A.

Third, the Nebraska Companies note that it is essential for the expansion of broadband services in very rural areas that per-minute Intercarrier Compensation ("ICC") charges are maintained. Elimination of this revenue stream will harm rural broadband providers if others are permitted to use the providers' networks for free which will occur if services originating or terminating on rural PSTN facilities are allowed for virtually no charge or on a bill-and-keep basis, thus creating more pressures for USF cost recovery. A more constructive approach would

be to undertake efforts to move intrastate and interstate access rates to uniformity, and thus help to eliminate incentives for access rate avoidance. The Nebraska Companies submit that the Commission should consider the impact of both special and switched access in rural markets as both are essential to rural broadband deployment and to reasonably priced access to broadband-based Internet services.

Finally, in an effort to ensure that a state-federal partnership with respect to universal service is advanced, the Commission should adopt a plan that provides additional incremental federal universal service matching funds as a means to encourage states to establish and maintain their own universal service funds. Specifics regarding such a proposal are included in Appendix B to the comments. The Commission should also establish more stringent Eligible Telecommunications Carrier ("ETC") requirements including a facility-based service threshold for such status as well as a two-year service period prior to any such status being provided as these requirements will bring discipline into the ETC designation process and will ensure that only those entities that are irrefutably committed to serve an entire rural service area are being designated as ETCs. Further, the Commission should adopt an appropriate revenue benchmark (with a rates being the same for both residential and business customers) in order to avoid penalizing states that have already undertaken intercarrier compensation reform. Carriers should also be required to increase Subscriber Line Charges to the existing cap (or impute the same level) in order to reduce carriers' federal universal service fund draws in that equity dictates that all customers should pay their fair share in order to free up additional federal USF dollars for disbursement. Finally, the Nebraska Companies submit that the Commission should ensure that each state has a sufficient contribution base in order to make state universal service funds viable in the future.

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COMMENTS OF THE NEBRASKA RURAL INDEPENDENT COMPANIES

I. INTRODUCTION

The Nebraska Rural Independent Companies ("Nebraska Companies"),[1] which provide telecommunications and broadband access services to some of the most-rural, sparsely populated parts of America, appreciate the opportunity to submit these Comments in response to the Notice

[1] The Companies submitting these Comments are: Arlington Telephone Company, The Blair Telephone Company, Cambridge Telephone Company, Clarks Telecommunications Co., Consolidated Telephone Company, Consolidated Telco, Inc., Consolidated Telecom, Inc., The Curtis Telephone Company, Eastern Nebraska Telephone Company, Great Plains Communications, Inc., Hamilton Telephone Company, Hartington Telecommunications Co., Inc., Hershey Cooperative Telephone Co., K. & M. Telephone Company, Inc., The Nebraska Central Telephone Company, Northeast Nebraska Telephone Company, Rock County Telephone Company, Stanton Telecom Inc., and Three River Telco.

of Proposed Rulemaking and Further Notice of Proposed Rulemaking issued by the Federal Communications Commission (the "Commission").[2] The resolution of the issues raised in these proceedings will determine whether and how availability of broadband services is expanded to rural consumers such as those served by the Nebraska Companies, and whether carriers that currently provide voice and broadband services to rural consumers will be financially able to continue to do so in the future.

The *NPRM* represents an impressive work effort by the Commission and its Staff. The Nebraska Companies appreciate the opportunity to continue to provide suggestions and input toward the development of data-driven, policy-based positions as the Commission considers reforms to universal service and intercarrier compensation. The Nebraska Companies support the Commission's primary objective of the National Broadband Plan ("NBP") and ensuing dockets – to bring broadband services to all Americans.[3] At the same time, the Nebraska Companies respectfully submit that the Commission must ensure that its actions to encourage the deployment of broadband in all areas of America do not undermine the continuation of the successful cost-recovery policies and mechanisms that have provided the basis for the current

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[2] *See*, In the Matter of Connect America Fund, WC Docket No. 10-90, A National Broadband Plan for Our Future, GN Docket No. 09-51, Establishing Just and Reasonable Rates for Local Exchange Carriers, WC Docket No. 07-135, High-Cost Universal Service Support, WC Docket No. 05-337, Developing an Unified Intercarrier Compensation Regime, CC Docket No. 01-92, Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Lifeline and Link-Up, WC Docket No. 03-109, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC 11-13 (rel. Feb. 9, 2011)("*NPRM*" or "*Notice*").

[3] *See*, Connecting America: The National Broadband Plan, (rel. March 16, 2010) at p. XIV; *see also*, In the Matter of Connect America Fund, A National Broadband Plan for Our Future, High-Cost Universal Service Support, Notice of Inquiry and Notice of Proposed Rulemaking, FCC 10-58, (rel. Apr. 21, 2010).

broadband availability in the areas served by Rural Local Exchange Carriers ("RLECs")[4] such as each of the Nebraska Companies. It would be unfortunate for all consumers in this country if the Commission were to forsake the gains by the RLECs in deploying networks that provide advanced services in the hopes that other providers will now make a commitment to serve sparsely populated areas that they have chosen not to serve over the last decade. The Nebraska Companies understand and acknowledge that the challenges relating to provision of ubiquitous broadband service to rural, high-cost areas are immense. Nonetheless, with rational policies that encourage investment, coupled with the elimination of arbitrage opportunities addressed in the *Nebraska Companies' Section XV Comments*,[5] the Nebraska Companies believe that the Commission will achieve its objectives without subjecting RLECs that have fostered and advanced universal service in rural America to the additional uncertainty that certain aspects of the *NPRM* could create. Thus, the Nebraska Companies will continue to provide thoughtful, fact-based inputs regarding the Commission's proposals[6] as well as constructive additional

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[4] The Nebraska Companies use the term "RLEC" in a manner consistent with the definition of a "Rural Telephone Company." *See,* 47 U.S.C. § 153(37).

[5] Section XV Comments of the Nebraska Rural Independent Companies, *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, *High-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Lifeline and Link-Up*, WC Docket No. 03-109 (Apr. 1, 2011) ("*Nebraska Companies' Section XV Comments*").

[6] *See, e.g.*, Vantage Point Solutions Engineering Study, Comments of the Nebraska Rural Independent Companies, Attachment A: "Nebraska Rural Independent Companies—An Engineering Analysis of the Broadband Assessment Model Using Actual Network Data," *In the Matter of Connect America Fund*, WC Docket No. 10-90; *A National Broadband Plan for Our Future*, GN Docket No. 09-51; and *High-Cost Universal Service Support*, WC Docket No. 05-337 (July 12, 2010).

proposals based on real-world data concerning implementation of reasonable future regulatory changes that advance the needs of RLECs, and most importantly, the customers served by RLECs.

The Nebraska Companies will address the *NPRM* based on the Commission's premise that, effectively, the funding level of the current USF and the proposed Connect America Fund ("CAF") will not be increased. With this as a starting point, the Nebraska Companies are encouraged by some positive movement by the Commission in recognition of the need to maintain rate-of-return regulation in both the near-term and the long-term for RLECs that serve the nation's most-rural areas as this regulatory regime. The rate-of-return regime has, in fact, fostered, encouraged and advanced universal service throughout much of the RLECs' service areas while, in turn, providing the necessary predictability for recovery of investments that allowed deployment of broadband service in the RLECs' service territories.

As the Commission looks to reform the universal service system it should provide RLECs with a reasonable opportunity to recover their investments, thereby ensuring continued quality of service to their consumers during the transition. The Nebraska Companies are pleased that the Commission has recognized their efforts to put forth concrete proposals that directly address the Commission's expressed concerns with rate-of-return regulation.[7] Specifically, the efforts undertaken by the Nebraska Companies in terms of capital expenditures ("CapEx) analysis are intended to provide data to the Commission with respect to the actual correlations between areas served and costs of fiber deployment. Thus, through this process, RLECs will have some degree of reasonable assurance that an opportunity exists to recover their cost of

[7] *Notice*, para. 203; FN 318, 319.

providing broadband service, a result that will also provide the Commission with assurance that support is provided for reasonable costs associated with deploying broadband. As the Nebraska Companies proposed, if the Commission is to use CapEx data to constrain support for capital investment, it should include an administratively efficient and timely waiver mechanism since any regression analysis will not capture all of the variables associated with the cost of broadband deployment.

Many issues are still pending regarding reforms of the existing USF recovery for rate-of-return carriers. These issues will determine whether USF disbursements will be sufficient to sustain companies that solely serve rural markets, *i.e.* long-term support from the proposed CAF and both the near-term and long-term future of intercarrier compensation ("ICC") revenues from all services using the public switched telephone network ("PSTN"). Regarding the ICC issues, the Nebraska Companies draw the Commission's attention particularly to the potential harm that will occur if services originating or terminating on rural PSTN facilities are allowed to do so for virtually no charge or on a bill-and-keep basis.[8] The revenue being generated by per-minute ICC services (and specifically intrastate and interstate exchange access services) are significant and reflect the use of (and thus the value of) a telecommunications carrier's existing network vis-à-vis the ability of other service providers to originate and terminate traffic through the use of such network. Migrating to bill-and-keep will simply create more pressures for USF recovery, resulting in a vicious, and potentially irreversible, downward spiral to the detriment of universal service in rural areas served by the RLECs. Understandably, the current per-minute rate structure for ICC may change, but the concept of bill-and-keep (or rates that effectively result in

[8] *See, Nebraska Companies' Section XV Comments*, pp. 2-14.

bill-and-keep such as $0.0007) understate and effectively ignore the value of the PSTN to providers that use the RLECs' networks.

The decision the Commission reaches regarding the appropriate rate for Voice over Internet Protocol ("VoIP") traffic could effectively eliminate the ability of the Commission to reasonably deal with ICC and universal service reform. A decision to adopt a separate VoIP rate or bill-and-keep will create an overwhelming incentive for carriers to declare all voice traffic to be VoIP, resulting in chaos and the almost immediate elimination of ICC revenues that support broadband deployment in rural markets. The Nebraska Companies urge the Commission to maintain the existing ICC regime for all services that use the PSTN and to affirm the application of existing Commission rules, as well as mandate additional rules for call signaling and billing as recommended in *Nebraska Companies' Section XV Comments*.[9]

II. WHILE THE *NPRM'S* NEAR-TERM RECOMMENDATIONS MAINTAIN RATE-OF-REGULATION, SOME RECOMMENDATIONS WOULD HAVE RESULTS CONTRARY TO THE COMMISSION'S GOALS

The *NPRM* proposes a series of near-term reforms for rate-of-return carriers that the Commission states would commence in 2012, and possibly be phased in over a period of time.[10] The Nebraska Companies provide the following comments and analysis on several of these proposals, and note that the *NPRM* demonstrates progress from previous Commission recommendations under the NBP that proposed to eliminate rate-of-return regulation for rural carriers.

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[9] *Id.*, pp. 10-19.

[10] *NPRM*, para. 157.

A. Rate-of-Return Regulation Has Clearly Had a Positive Impact on Broadband Deployment in Rural Areas.

Numerous parties concerned with and responsible for broadband services to rural areas (including the Nebraska Companies) have provided significant arguments and data for the record on the harm that would occur if rate-of-return regulation is eliminated.[11] The Nebraska Companies are concerned that despite retention of rate-of-return for at least the near term, the Commission may not maintain rate-of-return regulation over the long term.[12] However, the Nebraska Companies submit that RLECs should continue to be provided with a reasonable opportunity to recover the costs of providing service to these rural areas. As will be demonstrated later in these Comments, the Commission can achieve its goals of encouraging efficiency and rational investments and operations by RLECs by establishing and implementing reasonable parameters for future USF disbursements without undermining the current level of broadband deployment achieved in rural areas through rate-of-return regulation. As such, the Nebraska Companies respectfully submit that rational and prudent public policy requires a recognition that there are many areas of this nation where investment in and operation of the

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[11] *See*, Joint Comments of NECA, NTCA, OPASTCO, WTA, The Rural Alliance, Comments of the Blooston Rural Carriers, Joint Comments of the Nebraska Public Service Commission and the North Dakota Public Service Commission, Initial Comments of the Pennsylvania Public Utility Commission, Comments of the Nebraska Rural Independent Companies, Comments of the North Dakota Rural Telephone Group, Comments of the South Dakota Telecommunications Association, and The Missouri Small Telephone Company Group Initial Comments, *In the Matter of Connect America Fund*, WC Docket No. 10-90; *A National Broadband Plan for Our Future*, GN Docket No. 09-51; *High-Cost Universal Service Support*, WC Docket No. 05-337 (July 12, 2010).

[12] *Id*.

networks necessary to provide high quality basic telecommunications services and broadband services will not exist without maintaining some form of rate-of-return regulation.

Of course, the challenge to the establishment of rational and prudent public policy is to test various alternatives against reliable and verifiable data. The Nebraska Companies strongly support the Commission's data-gathering efforts, and have themselves been at the forefront of cooperating with the Commission Staff's data requests.[13] The Nebraska Companies have also provided confidential responses to the requests for data issued by the state members of the Joint Board on Universal Service.[14] The Nebraska Companies have taken these actions based on their belief that policy-making decisions will be more reasonable and will reflect the public interest if made on the basis of reliable and thorough data.

The Nebraska Companies suggest that it is important that the Commission expends the time and resources necessary to gather and analyze data representative of all of the rate-of-return local exchange carrier ("LEC") industry, and does so at a level of granularity that will allow the Commission to accurately discern the significant differences among rate-of-return carriers and to

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[13] One of the Nebraska Companies was among the first carriers to provide data on its communications operations to the Commission. *See* letter requesting confidential treatment of data, filed in connection with July 30, 2010, ex parte meeting by Great Plains Communications, Inc.

[14] In March 2011, at the request of the State Members of the Federal-State Joint Board on Universal Service, Peter Bluhm and Robert Loube of Rolka, Loube Saltzer Associates prepared and sent out a data request to telecommunications service providers seeking information on the regulated and non-regulated operations of each company. The purpose of the data request was to assist the State Members of the Federal-State Joint Board on Universal Service in drafting comments to the Commission to demonstrate the impact the USF/ICC reforms proposed in the NPRM and FNPRM will have on telecommunications service providers. The comments of the State Members of the Federal-State Joint Board on Universal Service are due to the Commission on May 2, 2011.

incorporate those differences into its decisions. While the Commission has sought such data from the National Exchange Carrier Association, Inc. ("NECA") for those companies participating in the NECA pooling and tariffing processes, the Nebraska Companies are not aware of similar efforts with respect to data gathering beyond this subset of companies.[15] Thus, the focus of the Nebraska Companies at this time is on the policy rationale behind the rate-of-return proposals set forth in the NPRM, and whether the benefits to rural consumers are improved by the changes in policies that are being considered. Ultimately, however, the Companies urge the Commission to refrain from making final decisions on modifications to rate-of-return regulation until it has collected and analyzed the aggregate impact of these changes on all carriers operating under this form of regulation as well as price cap regulation. This analysis is important as all federal USF is ultimately proposed to be shifted into one common mechanism, the CAF.

B. Existing Investments Made Under Existing Rules Must Be Accommodated.

In addition, before implementing any of changes to federal USF, the Commission must also decide how to deal with specific impacts on individual companies if existing universal service rules are modified.[16] The Nebraska Companies are properly concerned that a "mid-course" change in recovery levels and policies would be tantamount to "changing horses in mid-

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[15] *See,* Letter captioned "Data Related to Universal Service and Intercarrier Compensation Reform," March 29, 2011, from Sharon E. Gillett. The *NPRM* requests a variety of data from rate-of-return carriers to aid in its analysis to determine whether and how costs should be recovered as it develops CAF to replace existing high-cost support. *See generally*, *NPRM*, paras. 564-573.

[16] The Commission asks in *NPRM* para. 163 how it should take into account the extent to which these proposals in the aggregate would impact a company's cash flow to repay outstanding loans.

stream," and would improperly undermine the reasonable and proper reliance by the companies that have made reasonable network investments and operational decisions based on the continued existence and integrity of the regulatory process under which such decisions were made. It is therefore fair and reasonable that companies which have made such decisions in the context of the existing rate-of-return USF regime are provided with an opportunity to recover their costs as part of or prior to any changes in such regulatory regime.

If, however, the Commission does proceed with changes in its rules pertaining to USF for rate-of-return regulation irrespective of the investments made in reliance on existing rules, the Nebraska Companies urge that any such revised rules include a waiver process permitting a company to specifically demonstrate the harm that will result to the company and thus to its customers. This will enable companies that believe they made reasonable investment decisions under the existing USF rules to be permitted to obtain continuing support necessary to enable it to discharge debt incurred for network investments. For example, such a waiver process would specifically include debt incurred under the broadband stimulus programs sponsored by the Rural Utilities Service and the National Telecommunications and Information Administration as it is entirely right and proper that agencies of the federal governmental should be "on the same page" as far as broadband deployment and repayment of debts incurred for that purpose.

C. The Nebraska Companies Provide the Following Recommendations and Inputs Regarding Local Switching Support, Adjustment to the Safety Net Additive and Limiting Corporate Operations Expense.

1. The Nebraska Companies Recommend That Local Switching Support Be Combined With High Cost Loop Support To Be Used To Support Broadband in High-Cost Areas.

The Nebraska Companies fully recognize that an on-going transition from traditional circuit switched to IP-based technology is occurring. This transition is not surprising and is akin

to the industry's transition from step switching to electromechanical switching and from there to digital switching. These natural migrations reflect technological advancements and improvements in service provisioning and should not be hampered. With this as background, the Nebraska Companies provide the following comments on the Commission's proposal to either 1) merge Local Switching Support ("LSS") with High Cost Loop Support ("HCLS") into one high-cost mechanism so that support would flow to areas that are above average cost,[17] or 2) eliminate LSS and utilize the savings to target funding to areas that are unserved with broadband.[18]

With respect to the second aspect of the Commission's proposal – the elimination of LSS with the use of saved funding to serve unserved areas – the Nebraska Companies do not believe that from a practical perspective, this is workable proposal. Due to the dynamic nature of broadband demand, the definition of unserved areas will likely continue to evolve. Thus, this dynamic will make it difficult to target existing LSS to areas which could be defined as served today, but could be considered unserved in the future. At the same time, however, a broadband network still needs to have technology deployed within it to direct the telecommunications to the ultimate destination. The Nebraska Companies submit that there is no sustainable reason to suggest that the elimination of LSS is proper as the switching function will simply take on a different form as networks migrate to the next generation. As a result, the Nebraska Companies support the migration of LSS and HCLS into one mechanism for the support of broadband in high-cost areas. This can be most effectively accomplished by combining the local switching

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[17] *Id.*, para. 191.

[18] *Id.*, para. 190.

costs with loop costs into one high-cost mechanism, which the Commission has proposed to define as the Local High Cost Support mechanism ("LHCS").

The Nebraska Companies recommend that LSS be transitioned to LHCS over a period of four years.[19] This would allow time for existing recipients of LSS to recover sunk costs. The Nebraska Companies also believe merging LSS with HCLS into one program will remove the incentive for carriers not to merge study areas within the same state.

2. The Nebraska Companies Recommend the Following Alternative Proposal to Adjust the Safety Net Additive Qualification Procedures Rather than the Complete Elimination of Safety Net Support.

The Commission has asked for comments regarding the elimination of Safety Net Additive ("SNA") support. Since the inception of the SNA, it has not been capped and has grown from approximately $9.1 million in 2003 to $78.9 million in 2010.[20] This growth most likely has resulted from the increased investment by companies to meet customer demands and to update aging facilities, but could also be in part due to the qualification method and the decrease in access lines. With the national trend of access line decline, the Nebraska Companies understand the concern that incumbent LECs are qualifying for additional support through the SNA program without making significant investments in plant in service. Yet, the concern for the significant growth in SNA support, should not form a basis for the Commission to completely eliminate SNA support without consideration of the impact such elimination would

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[19] HCL could be capped in the year of implementation of the proposed rule change with LSS amounts transitioning in equal elements to the new support mechanism. The LHCS cap after the transition would be calculated as the HCL cap as previously calculated plus total LSS support paid during the calendar year prior to implementation of LHCS.

[20] *NPRM*, para. 184, n. 293.

have on RLECs that depend on SNA to support investments in those instances in which high-cost loop support is capped.

The Nebraska Companies agree with the Commission that based on current qualification methods, SNA could go to support companies that are experiencing significant access line loss without making significant investments to their plant in service. However, the Nebraska Companies do not agree with elimination of this support without taking into consideration alternatives to the qualification process. Therefore, the Nebraska Companies urge the Commission to re-evaluate this proposal and consider instead, restructuring the current qualification process.

Also, when addressing increases in SNA support the Commission should consider the amount of the SNA support directed to competitive ETCs and the impact of the SNA increase on the size of the USF. In its evaluation of the SNA, the Nebraska Companies respectfully request that the Commission quantify the amount of such increase nationally that has been due to the identical support rule or competitive ETC support.[21] Based on this quantification, the Commission may ultimately determine that it is appropriate to consider elimination or revision of the identical support rule as a means to substantially address much of the past growth of SNA support and more importantly future growth.

The Nebraska Companies propose that the following revisions be considered when determining whether a LEC qualifies for SNA support. The qualification process should take

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[21] According to the Universal Service Administration Company quarterly projection for 2nd Quarter 2011, monthly SNA support for Competitive carriers in the state of Nebraska is projected to be $49,230 total, which is 65% of the total projected monthly SNA support for the State of Nebraska.

into consideration the change in total plant in service each year and eliminate any correlation to line or total plant in service per-line changes. By eliminating the total plant in service per-line determination and focusing solely on the increase in total plant in service, only those companies that are making significant investments in their networks would be eligible for the additional SNA support. Implementation of this change would restore the basis on which SNA was originally intended to provide support. The Nebraska Companies also propose that any change in SNA be on a prospective basis only, and not affect any retroactive support, or qualification.

3. The Functions Reported In Corporate Operations Expense Are Necessary For Carriers To Operate Voice and Broadband Networks and Must Not Be Eliminated In Calculating USF and Future CAF Support.

In the *NPRM*, the Commission seeks comment as to whether reducing or eliminating universal service support for corporate operations expenses is appropriate.[22] The Commission suggests that eliminating the eligibility for recovery of corporate operations expenses will allow USF support to be more directly focused on investments in network build-out, maintenance, and upgrades.[23] The Nebraska Companies disagree with the Commission's assessment. Eliminating the ability of small, rural carriers to recover funding for corporate operations expenses may actually lead to decreased network investment in rural areas—areas in which investment is most crucial.

Business necessity dictates that RLECs perform the same general operational functions (*i.e.,* accounting, administrative, compliance, financial, legal, managerial and regulatory) that

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[22] *NPRM*, para. 194.

[23] *Id*., para. 198.

large carriers are required to perform. The Nebraska Companies maintain that eliminating recovery for corporate operations expenses from USF or CAF for small and rural carriers will only further reduce these companies' operating cash flows, ultimately leading to a reduction in the human resources necessary to make strategic decisions for network deployment, to operate network upgrades and to conduct the maintenance of the network in direct contravention of the ubiquitous broadband deployment goals contained in the NBP.

Similar concerns exist with respect to the Commission's concurrent proposals to eliminate corporate operations expenses and to modify HCLS. These proposals could have the effect of reducing HCLS to some carriers. The financial uncertainty stemming from possible reductions in support will further discourage additional network investment. Accordingly, the Nebraska Companies respectfully request that the Commission address these proposals with the utmost caution, and anticipate and address the negative public policy implications presented by imprudent adoption of such proposals which could jeopardize the financial viability of America's rural broadband providers.

The Nebraska Companies also urge the Commission to take a more moderate approach and consider proposed alternatives to the elimination of corporate operations expenses.[24] For example, the Nebraska Companies suggest that the Commission give consideration to limiting at the holding company level the total amount of corporate operations eligible for HCLS, rather than at the study area level. Alternatively, the Nebraska Companies propose that the Commission consider imposing an overall cap on operating expenses. A cap on operating

[24] *NPRM*, para. 198.

expenses would create a system of accountability for total expenses, as opposed to carving out restrictive limitations on corporate operations expenses.

III. BY MAINTAINING RATE-OF-RETURN REGULATION WITH REASONABLE PARAMETERS BASED ON ACTUAL COSTS, THE COMMISSION CAN BE ASSURED OF EFFICIENCY IN USF DISTRIBUTIONS

The Nebraska Companies commend the Commission for its modifications in the *NPRM* from the initial ICC-USF Notice of Inquiry ("NOI") following issuance of the NBP.[25] In the NOI, the Commission initially proposed to eliminate rate-of-return regulation for all local exchange carriers and to require such carriers to move to a form of incentive regulation.[26] While many issues exist regarding the evolution and implementation of rate-of-return regulation in a broadband world, it is heartening for the future of service to rural consumers that the Commission appears to envision that rate-of-return regulation has a place in that future. The Nebraska Companies believe that by adopting reasonable parameters for rural carriers' capital and operating expenditures based on actual costs of these carriers, the Commission can achieve the efficiency in future distributions of transition USF and ultimately CAF support that it desires.

A. Rate-of-return Regulation with Appropriate Parameters Will Address Commission Concerns.

The Commission has indicated that without proper parameters, rate-of-return companies may be incented to invest at levels that might sometimes not be considered prudent. Moreover, rate-of-return companies may be motivated to invest in plant at a pace that puts too large a draw

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[25] Notice of Inquiry and Notice of Proposed Rulemaking, *In the Matter of Connect America Fund*, WC Docket No. 10-90; *A National Broadband Plan for Our Future*, GN Docket No. 09-51; *High-Cost Universal Service Support*, WC Docket No. 05-337 (rel. Apr. 21, 2010).

[26] *Id.*, paras. 54-55.

on the USF. Thus, the Commission is seeking to limit the amount of investment in a given area and the pace of such investment. In the NBP, the Commission proposed using market-based mechanisms to distribute universal service support. For rate-of-return areas, one option being considered by the Commission was the use of a hypothetical model, rather than using a company's actual cost, to calculate support.

As the Commission is well aware, hypothetical models have not historically provided accurate reflections of the costs of serving high-cost rural areas. Rate-of-return regulation, on the other hand, does reflect the actual cost of deploying broadband in costly, difficult to serve areas and has been a successful regulatory regime to advance the deployment of broadband. The Nebraska Companies believe that rate-of-return regulation with appropriate parameters will alleviate the Commission's concerns.

B. The Nebraska Companies have Developed and Propose a Regression Equation for Estimating Cost of Capital Expenditures.

In an effort to address the Commission's issues relating to investment levels, the Nebraska Companies engaged several consulting firms to produce a statistical regression analysis designed to predict outside plant capital expenditures for a high-capacity terrestrial wireline broadband network using publicly available variables. Rather than using hypothetical costs, the regression study was based on the engineered construction costs of rural, rate-of-return companies. The resulting study was described in the Nebraska Companies' Capital Expenditure Study, *Predicting the Cost of Fiber to the Premise* (the "*Nebraska Companies' CapEx Study*"),[27] and an overview of that study is included as Appendix A.

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[27] *Predicting the Cost of Fiber to the Premise,* Nebraska Rural Independent Companies' Capital Expenditure Study, ex parte filed January 7, 2011. *In the Matter of Connect America Fund, WC*

The regression study included 167 data points, representing nine (9) states. Using data from public sources as independent variables and inflation-adjusted construction costs per household[28] as the dependent variable, regression equations were developed. The analysis indicated that 86% of the variation in construction costs could be explained by six variables, with the primary driver being linear density.

C. Additional Data Is Needed to Apply and Use the Regression Analysis for Nationwide Cost Estimation.

While the results of this effort have shown much promise in predicting the cost of a high-capacity terrestrial broadband network, the Nebraska Companies are attempting to collect additional data to refine and expand the analysis such that it is more representative of all regions of the country.

1. Analysis of Data Points Eliminated Through the Gating Process has Created Methodology Improvements.

The original engineering data included approximately 430 projects, but approximately 60% of the data points were eliminated through a "gating process," which compared known engineering data to an analogous publicly-available Geographic Information System ("GIS") variable. Unfortunately, this process resulted in the elimination of some valid data and required a few states originally represented in the sample to be omitted. Time constraints related to the filing of the *Nebraska Companies' CapEx Study* limited the analysis that could be done to determine why these data points failed. Subsequent to the filing of the original regression

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Docket No. 10-90. A National Broadband Plan for Our Future, GN Docket No. 09-51, and High-Cost Universal Service Support, WC Docket No. 05-337.

[28] The Consumer Price Index was applied to the engineering estimates to adjust costs to a 2010 price level.

analysis, analysts have reviewed the data to determine if these data points could be included in a supplemental analysis. The following reasons for data to be excluded were identified:

1. In four states with a large number of data points that were eliminated, the engineering maps were compared to the GIS exchange boundaries. Problems with the original digitization process caused the exchange boundaries, and thus the calculated GIS area, to be incorrect. After correcting these boundaries, 12 additional entries passed through the "area gate." Of the original data points, 403 now pass through the "area gate."

2. Analysts discovered that census households are not always a reasonable proxy for actual subscriber locations, especially in areas with a large number of seasonal homes. When constructing outside plant, cable must be sized to serve seasonal homes and vacant locations where a customer may request service. Census households only include locations where people live permanently. For areas with few seasonal homes, households are a good proxy for the number of locations. In areas with a large number of seasonal homes, census housing units, which include all occupied and unoccupied units, are a better measure of the locations that must be built. When households were used as a proxy for locations, 140 data points failed the location gate. When housing units were used as a proxy for locations, 132 data points failed the location gate. By either choosing households or housing units, all but 88 data points passed through the location gate. While choosing between two census variables is not ideal, it allows those projects with a high number of seasonal homes to be considered, yet retains those data points for which households is a reasonable proxy. Complicating the choice of a GIS variable for customer locations is the age of the census data. Since the data is ten years old, the increases and decreases in population caused the number of locations not to match the Census data well. Once the 2010 census data is released a single public variable can probably be selected that will closely match the number of actual customer locations.

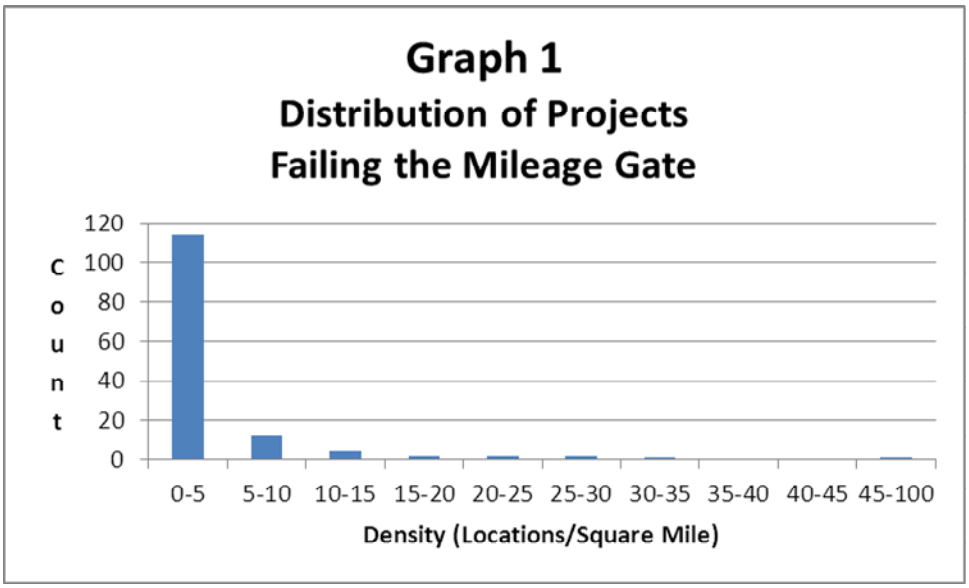
3. The thresholds for the location gate were also refined because several data points were failing the location gate that would have passed the mileage gate. The selection of the gate limits was somewhat arbitrary.[29] Upon further examination, analysts noticed that by adjusting the upper and lower limits on the location gate

[29] The upper and lower bounds for the area gate were set at 10% higher or lower than the mean, because there was no estimation error associated with area. The location and mileage gates were set at 20% higher or lower than the mean because of estimation errors associated with using GIS data instead of engineering data.

by just 5%, a significant number of additional entries would now pass through the gate.[30]

4. In some remote rural areas, the GIS-produced road miles do not accurately reflect cable route miles. The GIS road miles were calculated by summing road mileages in census blocks with a population greater than zero. In extremely remote areas, such as Montana, some of the distance between subscriber locations may traverse census blocks without population. Consequently, summing the road mileage within populated census blocks understates the actual route miles needed to connect to customers' locations. In other sparsely populated regions of the country, the population is distributed in such a way that there are many roads, *e.g.,* those that connect to irrigation pumps, etc., that do not pass any subscriber locations. In this instance, the number of GIS road miles exceeds the actual route miles needed for construction. Consequently, sparsely populated rural areas can produce two different, but equally incorrect, results depending upon the census block boundary and population distribution. To date, no solution has been found to resolve the GIS road mileage mismatch with cable mileage in sparsely populated areas. It appears that states may classify roads differently, which may be compounding the problem. In total, 138 data points failed the mileage gate. While the reason that each data point failed is unknown, the Nebraska Companies expect that either of these errors could be the cause in the vast majority of situations. Of the failed data points, 114 or 83% have a density of less than five locations per square mile. Graph 1, "*Distribution of Projects Failing the Mileage Gate*" shows how the errors are distributed by project density.

[30] After adjustment for the other study modifications, 87 data points were stopped with the original gate limits. After expanding the gate limits, only 62 data points were stopped.



5. The areas designated as being town construction costs were not consistent between the engineering data and the GIS data. The engineering cost data was separated into town and rural areas based on the relative construction cost per mile. These engineering distinctions are not necessarily coincident with the corporate boundaries of the town or city.[31] Thus, when the engineering mileage was compared to the GIS road miles derived from US Census "populated places" GIS data or visually estimated corporate town boundaries, there was a discrepancy. In small towns, this discrepancy caused a minimal absolute error in the road miles but a large percentage difference. Since many of the original town entries did not pass through the mileage gate even though the estimated mileage was not substantially in error, the analysts decided to change the mileage gate to allow entries to be used if the ratio of GIS road miles to the construction route miles is within the original gate limits of 80% and 120% or if the absolute mileage difference is less than 1.5 miles.[32]

[31] For example, if a housing development was outside the corporate boundaries of a town, the project was considered town construction in the engineering data because the construction cost would be similar to the cost to build within the corporate limits of the town. In the GIS data, a housing development outside the boundaries established through public variables for the town would be considered rural.

[32] Using this revised mileage constraint, 138 data points were excluded, whereas there were 176 excluded data points originally.

The purpose of the gating process was to ascertain whether the GIS data provided a close enough proxy to the engineering data. Vantage Point Solutions has concluded that the vast majority of the engineering cost data removed in the gating process was, in fact, accurate. Much of the problem with the data can likely be attributed to the use of ten-year-old census data being matched to more recent engineering data. Once the 2010 census data is available, the Nebraska Companies will be in a better position to determine if there are systematic problems with using GIS data for estimation, or if the age of the census data is the primary issue. In the meantime, work on the gating process will continue in an effort to maximize the effectiveness of the 2000 census data.

Due to inaccuracies in estimating cable route miles and customer locations using public variables, the Commission may wish to consider collection of this information directly from communications providers. Assuming a successful regression analysis is developed and implemented, the Commission could allow providers to accept the GIS data inputs or provide more accurate data if the providers could show the GIS data to be inaccurate. If there were concerns regarding the accuracy of the provider-supplied information, the Commission could require a third party, *e.g.*, a professional engineer, to develop or certify the information.

2. Supplemental Data Is Being Requested from Other Engineering Firms.

The goal of a properly designed sample is to have sample data accurately representing the characteristics of the population that is to be analyzed. The analysis filed in January was based on fiber to the premises ("FTTP") cost information from a single engineering firm, albeit for a large number of projects from numerous states. Since all engineering firms are attempting to estimate costs that reflect contractors' bids, the costs should be relatively the same regardless of the engineering firm submitting data. Since Vantage Point Solutions does not have a nationwide

client base, some states were not represented in the data set in proportion to the number of rate-of-return companies serving in those states. Construction costs can vary greatly from state to state due to differences in the difficulty of construction resulting from geography, subscriber density, economic climate, weather, etc. To improve the accuracy of the analysis, data from as many states as possible should be included. Data has been requested from engineering firms nationwide, but unfortunately many firms have not provided information because of confidentiality and workload concerns. The table below shows the geographic distribution of data points in the sample relative the distribution of rate-of-return companies and access lines.

	Percentage Distribution		
	Data Points Included in Regression	Rate-of-Return Companies	Rate-of-Return Access Lines
Midwest[33]	87%	51%	32%
South	3%	26%	44%
Northeast	0%	8%	11%
Southwest	1%	2%	2%
West	9%	13%	11%
Total	100%	100%	100%

From the table, one can easily see that the sample would be more representative nationwide if additional data could be obtained for projects in areas other than the Midwest. The Nebraska

[33] Midwest states include Ohio, Michigan, Indiana, Wisconsin, Illinois, Minnesota, Iowa, North Dakota, South Dakota, Kansas and Nebraska. Western states include Colorado, Wyoming, Montana, Utah, California, Idaho, Oregon, Washington, Hawaii and Alaska. Southwestern states include Texas, Oklahoma, New Mexico, Arizona, and Nevada. Southern states include Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Arkansas, Louisiana and Missouri. Northeastern states include Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, and Maryland.

Companies note that their work continues to collect as much information as possible prior to the Reply Comment filing date.

Once the new data is collected and analyzed and any changes to the gating process are finalized, the regression analysis will be rerun. Once the revised analysis is completed, the analysis will need to be tested to determine if it accurately predicts construction costs across the nation. By comparing the analysis results with actual construction costs for a variety of locations, the predictive accuracy can be ascertained. Continued work on the analysis will be dependent upon feedback and direction received from the Commission.

D. In Addition to Constraining the Total Level of Capital Investment the Commission also Has Expressed an Interest in Modifying Rate-of-Return to Constrain the Pace of Investment.

The Commission has expressed an interest in developing incentives that would encourage companies to deploy broadband over a reasonable period of time. The Nebraska Companies typically spread investments over multiple years, deploying broadband deeper into their networks over time as funds are available and as aging infrastructure requires replacement. In certain instances, however, it is necessary to replace infrastructure throughout an entire exchange such as when aging plant is failing or the exchange is small. In order to address the Commission's concerns, the Nebraska Companies recommend a reasonable approach to restraining the pace of investment and thus support the "Proposal for Allowed Loop Plant Capital Expenditures" included in a joint filing made by the Rural Associations.[34]

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[34] *See*, Comments of the NECA, *et. al.*, *Connect America Fund*, WC Docket No. 10-90, *et al.*, Appendix A, "Proposal for Allowed Loop Plant Capital Expenditures for High Cost Funding of Future Loop Plant Investments" (Apr. 18, 2011).

IV. IT IS ESSENTIAL TO EXPANDING BROADBAND SERVICES IN VERY RURAL AREAS THAT PER-MINUTE INTERCARRIER CHARGES ARE MAINTAINED

The *NPRM* suggests a conclusion that per-minute intercarrier compensation charges are an impediment to broadband deployment, and thus suggests that the long-term goal should be the elimination of such charges.[35] The Nebraska Companies respectfully disagree with this conclusion. Contrary to the suggestion being made, ICC charges – and, in particular, exchange access charges – provide a key revenue source that has helped rate-of-return companies fund the migration of a circuit-switched network to a network that is capable of supporting both voice and broadband. It is this very network that is relied upon by VoIP, long distance, wireless, and other providers to provision their services.[36] Accordingly, for the following reasons, the Nebraska Companies urge the Commission to address the practical hurdles that exist in pursuing its proposed objective of eliminating such per-minute intercarrier compensation and to assess what revenue recovery mechanism will be instituted to offset the significant reduction of recovery that is being addressed by the revenues that are being received.

The Nebraska Companies estimate that the current total annual amount of interstate and intrastate switched access revenues for rate-of-return carriers is between $1.0 and $1.2 billion. For massive carriers such as AT&T and Verizon to contend that these charges are a primary

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[35] *NPRM*, paras. 40 and 505.

[36] The Nebraska Companies are not addressing appropriate compensation regimes for interconnected VoIP traffic in this filing, as these issues were addressed in the *Nebraska Companies' Section XV Comments* and will be further addressed in the *Nebraska Companies' Section XV Reply Comments* to be filed on April 18, 2011. Most of the concerns spelled out explicitly for VoIP traffic in that document, while not repeated in these Comments and Reply Comments, do apply to all intercarrier compensation per-minute traffic where rates would be set at or close to zero.

impediment to broadband deployment in rural America is not credible.[37] To the contrary, it is in part because of this cost recovery that rate-of-return carriers have achieved their broadband deployment to date.

In the vernacular, the Nebraska Companies submit that there should be no "free lunch" In the use of networks. Whether it be in the context of utilizing a carrier's network or in establishing a glide path to a new regulatory regime focused on broadband, the concept applies. It is imprudent public policy to suggest that ICC charges should be eliminated (thus offering carriers a free ride) while on the other hand not providing for a replacement recovery mechanism to address the cost recovery/revenue shortfall that arises.

A. Elimination of ICC Revenues Will Harm Rural Broadband Providers If Others Are Permitted to Use Their Networks for Free.

As operators of circuit-switched and IP-based facilities in some of the nation's most rural areas, the Nebraska Companies note that switched access and reciprocal compensation revenues are used to assist with the recovery of network costs to serve rural America. Accordingly, the Nebraska Companies respectfully submit that it would be entirely improper to suggest that rural carriers should, by regulatory directive, be required to give away access to their networks for free especially when universal service support is widely acknowledged to be insufficient to accomplish the nation's broadband goals.

The *NPRM* effectively suggests that per-minute ICC charges are often too high,[38] especially in many intrastate jurisdictions. Although it is true that states have used intercarrier

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[37] AT&T's total company revenues in 2010 were more than $124 billion with net income of almost $20 billion, while Verizon's total revenues in 2010 were more than $106 billion with operating income of $14.6 billion. Rate-of-return access charges get lost in the rounding of such eye-popping figures.

compensation to help accomplish universal service objectives, the Nebraska Companies submit that it would be imprudent public policy to fail to address the fact that access charges, in particular, have been a necessary component of rate-making and cost recovery for rural carriers for approximately a quarter of a century. Thus, any action to eliminate a substantial portion or all of these revenues – which despite declining minute volumes still account for a sizable part of rural providers' revenues – raises significant universal service challenges for carriers, such as the Nebraska Companies, that have based their rate designs and recovery on these charges.

It appears that the Commission agrees with the above-stated position. The Commission appropriately acknowledges in the *NPRM* that intercarrier charges remain an important part of cost recovery in rural areas;[39] it further acknowledges in the *NPRM* that it is not politically possible to grow the size of USF;[40] and it also acknowledges that replacement funding for reductions in rural carriers' ICC will not come from federal USF.[41] Yet the *NPRM* does not reconcile these positions when it concludes that eliminating the per-minute ICC system will somehow propel the nation toward expanded broadband service availability in rural areas.[42]

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[38] *NPRM*, para. 495. *See also*, FN 696.

[39] *Id*. para. 585.

[40] *Id*., paras. 6, 10, 79, 111, 157, 174, 241, 267, 275, 403, 412, 443, 492, 535, 545, 552, 559; FN 9, 271; Statements of Chairman Genachowski and Commission McDowell.

[41] *Id.*, paras. 42, 43, 492, 534, 538, 540, 567, 572, 595; FN 908.

[42] For example, as stated in the *Nebraska Companies Section XV Comments*, among the Nebraska Companies ICC revenues accounted for more than $20 million of the companies' collective annual regulated revenues. *See, Nebraska Companies' Comments on Section XV*, p. 7.

The Nebraska Companies understand that variations in charges between carriers, and among the services offered by carriers, can result in arbitrage opportunities if regulators are not vigilant. However, with respect to access charges being an impediment to broadband deployment, there is no basis in fact to reach this conclusion for the typical rural areas served by RLECs. In any event, the Commission is well aware as a result of its tariffing rules and its oversight thereof that costs in rural areas are higher than in urban and suburban areas and that filed rates would reflect these high costs. This conclusion is further supported by the great disparity in costs between rural areas in different parts of the nation, as the *NPRM* acknowledges in noting that density is the primary cost driver.[43] However, it is one thing to conclude that such rates are too high in various jurisdictions; it is another to conclude that access charges should be eliminated across the board.

Accordingly, the Nebraska Companies respectfully suggest that the Commission alter its conclusion and work to establish a reasonable ICC policy and viable and fair cost recovery for ICC reductions that will allow broadband deployment in rural areas to survive. Absent that conclusion, the Commission would further be undermining the very predictability that has allowed networks to be deployed, maintained and operated, including functions of those networks related to the provision of broadband.

B. Both Switched and Special Access Revenues are Essential to Rural Broadband Deployment, Yet the NPRM Ignores The Fact that Most Rural Markets Have More Customers that Use only Switched Access Services.

The Nebraska Companies respectfully suggest that, as the debate on ICC vis-à-vis broadband deployment continues, the Commission should expand that debate to acknowledge the

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[43] *Id*. para. 203.

important role that the special access services and rates of the largest transport carriers – for example AT&T and Verizon – have on the availability of reasonably priced access to broadband-based Internet service. Setting aside the irony of demanding reduced (if not eliminated) switched access rates,[44] the ability of these large transport providers to engage in "market-based pricing" for special access services for "middle mile" transport must be addressed because the Commission is well aware of the importance of the reasonably priced middle mile transport as a means of enabling access to the Internet.

Affordable middle mile is particularly crucial in rural Nebraska, where transport distances are extreme and sparse populations force many carriers to rely on other larger carriers for their special access connectivity. The Commission should be skeptical of parties' attempts to eliminate switched access charges while allowing special access charges to remain unregulated. These parties cannot, and should not, be allowed to have it both ways.

Furthermore, a larger portion of rural carriers' cost recovery is derived from switched access, given more of their customers are small and do not need or utilize special access services. That is very different for large carriers, for whom special access revenues are a much more significant part of their revenues. Thus, the loss of switched access revenues without alternate

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[44] *See*, Ex Parte of AT&T In the Matter of Developing a Unified Intercarrier Compensation Regime, CC Docket No. 01-92; High-Cost Universal Service Support, WC Docket No. 05-337; Federal-State Joint Board on Universal Service, CC Docket No. 96-45; Intercarrier Compensation for ISP-Bound Traffic, WC Docket No. 99-68; Establishing Just and Reasonable Rates for Local Exchange Carriers, WC Docket No. 07-135; IP-Enabled Services, WC Docket No. 04-36 (July 17, 2008). See also, Ex Parte of Verizon In the Matter of Developing a Unified Intercarrier Compensation Regime, CC Docket No. 01-92; In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 (Sept. 12, 2008).

recovery opportunities from USF support[45] is not only proportionately more harmful to rural carriers, it obviously benefits larger carriers since those carriers are dominant in the wholesale long-distance business and minimally utilize rural networks.

The *NPRM* interestingly recognizes the relationship in total cost recovery between switched and special access in one proposal on which it seeks comment. Specifically, as one option for recovery of lost switched access revenues, the Commission proposes to consider each price cap carriers' net switched and special access charges in determining whether recovery from CAF, USF or some other means is warranted.[46] The *NPRM* also notes that for rate-of-return carriers, netting of these changes in revenues subject to the authorized federal rate-of-return may be considered.[47] The Nebraska Companies believe this approach is fair and effective as it recognizes the overall revenue changes between these access "buckets" and takes into account the vast differences in the access markets between many rate-of-return carriers and price cap carriers. Also, this approach will minimize demands for overall ICC replacement from USF or CAF.

As a general proposition, it is questionable from an economic and public policy standpoint to require that a product or service be provided without compensation. As the Staff of the State Joint Board on Universal Service emphasizes, such a regulatory requirement would

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[45] The Nebraska Companies note that with the local rate benchmarks required under the Nebraska USF program along with subscriber line charge and other surcharges, total out-of-pocket local residential rates in the state already exceed $30 per month and cannot and should not be increased under any federal reforms contemplated by the Commission.

[46] *NPRM*, para. 568.

[47] *Id.*

result in an outcome that otherwise would not naturally arise in the market place.[48] The fact that the Act provides for a bill-and-keep option does not negate this conclusion. Bill-and-keep in today's per-minute world is only permissible under Section 251(b)(5) for reciprocal compensation traffic in instances where traffic is balanced. Moving ICC to a zero rate or near zero rate raises significant issues with respect to compliance with Section 254(k), which requires the Commission and states to ensure that services included in the definition of universal service bear a reasonable share of the joint and common costs of facilities used to provide those services.[49] While it is also true that there is bill-and-keep in the IP world related to "peering arrangements" those arrangements are only between the large providers with similar size and volume of traffic. Thus, rural carriers do not have access to bill-and-keep in the IP environment.

C. The Commission Should Focus on a Rational Long-Term Intercarrier Compensation Policy, Not Drastic Measures that Will Create Chaos for RLECs and their Customers.

The Commission asks whether the market for switched access should be discontinued and all traffic declared subject to pricing under Section 251(b)(5) rather than separate regimes for access and reciprocal compensation as established by Congress in the 1996 Telecommunications Act (the "Act").[50] The Nebraska Companies caution that such a step now or in the foreseeable future would be destructive public policy.[51]

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[48] Loube, R. and Pilalis, L. Intercarrier Compensation, A White Paper To The State Members Of The Federal-State Joint Board On Universal Service, (Feb. 7, 2011), pg. 11.

[49] 47 U.S.C. §254(k).

[50] *NPRM*, paras. 512-518.

[51] The Nebraska Companies note that, from a legal perspective, the National Association of Regulatory Utility Commissioners has already suggested that immediate adoption of a bill and

Interstate and intrastate switched access service (under 251(g)) and reciprocal compensation for exchange of local traffic (under 251(b) (5)) are two distinct regimes, with access comprising both originating and terminating inputs to retail providers offering interexchange services as well as terminating input to other retail providers (wireless and IP services such as Vonage) whose customers terminate calls using interexchange access service. Especially in rural areas, the access regime has been and continues to be an integral part of overall network cost recovery – particularly for transport facilities that carry voice and data to access tandems or Internet access points often located at distance points.

Large IXCs and wireless carriers are pressuring regulators to discontinue switched access service under the guise that it is a cost drag on development of IP-based networks, and thwarts broadband deployment in unserved areas.[52] The Nebraska Companies recognize that switched access is a service as currently constituted that will not exist when and if there is an IP-only service world. The Nebraska Companies have, in fact, been early adopters in urging regulators to reform USF in recognition of that ultimate goal.[53] However, the future vision of an IP-only service world does not support abandonment of the regime that provides compensation for the current use of a carrier's network and the services provided. The Nebraska Companies

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keep regime for VoIP or a VoIP-specific ICC rate would be "prescriptions for protracted litigation -- litigation that the FCC is likely to lose." Initial Comments of the National Association of Regulatory Utility Commissioners, WC Docket 10-90 et.al., filed April 1, 2011 at 6.

[52] *Id.*, paras. 506, 507; FN 914.

[53] *See,* Comments of the Nebraska Rural Independent Companies, *In the Matter of Connect America Fund*, WC Docket No. 10-90; *A National Broadband Plan for Our Future*, GN Docket No. 09-51; *High-Cost Universal Service Support*, WC Docket No. 05-337, (July 12, 2010) at pp. 2, 77-78.

respectfully suggest that it would be more productive for the Commission to shift its focus from eliminating exchange access compensation to a more realistic endeavor – narrowing the gap between interstate and intrastate switched access rate levels.

The Nebraska Companies urge that the Commission not undertake an effort to eliminate switched access, as all communications providers that utilize the PSTN should pay compensation for that use. A more constructive approach would be to undertake efforts to move intrastate and interstate access rates to uniformity, and thus help to eliminate incentives for access rate avoidance. The Nebraska Companies respectfully direct the Commission's attention to work performed by staff to the state members of the Joint Board on Universal Service in their intercarrier compensation white paper.[54] Authors Robert Loube and Labros Pilalis propose that regulators should not eliminate intercarrier compensation, but rather should transition the system gradually to one where the rates for all traffic types are unified by carrier, based on the costs of the areas in which a company operates. Pursuant to this proposal, ICC rates for companies in rural areas would be higher than rates for companies that operate in urban areas, a recognition of the obvious cost of service differences. But the authors properly recognize that it would be a mistake for regulators to insert themselves so as to direct marketplace behavior – intercarrier services given away for free – in a manner in which it otherwise would never occur. The Nebraska Companies suggest that under such an approach, it would be sensible to establish rate bands for rural carriers based on their costs, comparable to the rate banding that is contained in the NECA interstate tariff.

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[54] Loube, R. and Pilalis, L. Intercarrier Compensation, A White Paper To The State Members Of The Federal-State Joint Board On Universal Service, (Feb. 7, 2011).

V. INTRASTATE ACCESS REFORM SHOULD BE A JOINT EFFORT OF STATE AND FEDERAL GOVERNMENTS

A. The Commission Should Consider Federal Matching Funds as a Means to Encourage States to Establish and Maintain Universal Service Funds.

Given that the demand for universal service funding exceeds the available federal funding and that the Act contemplates a federal-state partnership,[55] the Commission should encourage all states to establish universal service funds. As the Commission implements access charge reform, the Nebraska Companies fully anticipate the need for intrastate intercarrier compensation changes in order to avoid arbitrage and provide revenue recovery consistent with an IP/broadband world. At the same time, as these changes take place, RLECs will see revenue shortfalls unless replacement revenue sources are established. From the Nebraska Companies' perspective it is rational that these replacement revenue sources should include support provided by state universal service funds. Such funds are designed to help offset the operating cost of the RLECs' networks, since it is those networks that provide both circuit switching and broadband today and that will evolve to be the IP-based rural networks of the future.

Accordingly, the Nebraska Companies suggest that the Commission create incentives for states to establish universal service funds by making available federal matching funds, as is done currently with federal highway funding and the telecommunications Lifeline program. Under such an arrangement, additional incremental federal support would be conditioned upon specified state contribution benchmarks. The Commission could further create incentives for states to take desired actions, such as unifying interstate and intrastate exchange access rates and structures, by conditioning provision of matching funds on state attainment of Commission

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[55] *See*, 47 U.S.C. § 254(b)(5).

objectives. To protect consumers in the highest-cost states, the Nebraska Companies recommend that a limit be established for a state's maximum contribution.

The rationale for state funding of a portion of the network costs includes the following:

- Federal law envisions joint responsibility for universal service.
- The level of federal funding is not sufficient to achieve the goal of ubiquitous broadband.
- A significant number of states have already established state funds, and should be rewarded for doing so.
- Customers in net payer states should only be asked to contribute to other states' universal service cost after the net recipient states have taken appropriate actions, including raising local rates, establishing appropriate earnings levels, and establishing state universal service funds.

State matching could be accomplished on a per-line basis, an eligible telecommunications carrier ("ETC") basis or on an aggregate state basis. Examples of how this may be developed are provided below.

If state matching were implemented on a per-line basis, the federal government would match a certain percentage of the state per-line contribution toward high-cost universal service. Above a specified state contribution per line, federal funding would provide the entire cost.[56] Appendix B provides details regarding implementation of a per-line approach to matching.

[56] For example, assume that a company receives $7 per line in incremental support. A state fund supplies $2 per line plus 35% of the cost above $2 per line or $2 + ($7 - $2) x 35% = $3.75 per line. The federal government funds 65% of the cost above $2 per line or ($7 - $2) x 65% = $3.25 per line. Assuming a state had a maximum funding obligation of $10.00 per line on an aggregated state basis, federal funding would provide the entire cost above $10.00 per-line. All amounts are provided for illustrative purposes only.

With respect to state matching being implemented on an ETC basis, the Commission could develop a program whereby incremental federal USF support would be made available to ETCs equal to a certain percentage of the state's high-cost recovery for that ETC. Using this method, each state would report the amount of state high-cost universal service fund disbursements to each ETC. The incremental federal payment to an ETC would be limited to a certain percentage of the state's disbursements to that ETC in the previous year.

A possible third alternative would be to limit incremental federal support to a certain percentage of a state's aggregate support to all ETCs in the state. Under this alternative, the incremental federal support in aggregate to all ETCs in a state would be limited to a percentage of the state's aggregate support to all ETCs.

The Nebraska Companies submit that any of these methods would create an incentive for states to take actions that would reduce intrastate access charges and limit states' funding requirements. States could mandate local exchange service rate increases and establish a company earnings level which would also mitigate state funding needs. If state funds were created in conjunction with intrastate access rate reductions, arbitrage opportunities would also be reduced.

A transition period would need to be established to phase in state support. Such a transition could be accomplished by increasing the state per-line funding requirement, or benchmark, over a series of years. The Commission seeks comment on whether four years would be an appropriate timeframe for implementation.[57] The Nebraska Companies agree that such a timeframe should be adequate. During this period, the state could obtain legislative

[57] *NPRM*, para. 534.

authority, if needed, to put a fund or other mechanism in place, hold hearings on fund structure and begin the process to align intrastate and interstate access charges.[58] For states that already have a state universal service fund, such a transition would not be necessary unless the state contribution would need to be adjusted. Since access charge reform is an initial step in the Commission's reforms, the transition of replacement money to state funds should occur as the CAF is being established.

B. Neither a Revenue Benchmark, Targeted Distribution of CAF Support, nor Both Will Be Sufficient Motivation for States to Establish Funds.

Only through a federal matching program is it likely that the Commission will create sufficient impetus for states to establish universal service funds. Implementation of federal matching will provide a basis for states to establish universal service funds and to overcome political pressures to minimize or eliminate state funding. While a reasonable revenue benchmark could also create equity among rural and urban customers and among states, a revenue benchmark alone is less likely to incent states to create funds.

The Commission has also suggested that CAF funds be initially directed to states with existing funds, presumably as a reward for having already established funds.[59] While such a program may be appropriate, this alone may not be adequate to induce other states to establish funds. The promise of additional funding or withholding of funding is more likely to provide a state and companies within a state the proper incentives to establish state universal service funds. For a state that otherwise might not have the political will to enact certain federal standards, the

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[58] For a discussion of the implementation of the Nebraska Universal Service Fund, *see, id.,* para. 589.

[59] *Id.,* para. 270.

"carrot" of either additional federal money or the withholding of federal money may provide sufficient motivation for that state to conform to federal requirements.

Some might argue that withholding funding or not providing additional federal funding would unfairly penalize companies that cannot unilaterally act to establish a state fund. Under the proposal envisioned herein, comparability standards in the law are still met, even if a state does not establish a state fund. In states with a state universal service fund, the state "buys down" the benchmark revenue level, which means that customers pay a lower end-user charge, but also must pay a state universal service surcharge. In states without a state universal service fund, the customers simply pay a higher end-user charge. When considering the end user charge and the state universal service surcharge, the amount the end-user pays would be comparable among the states, thus companies in states without funds are not unduly harmed.

C. The Commission Should Establish More Stringent ETC Requirements.

The Commission broadly asks about how to modify the existing ETC requirement as it proceeds with reform.[60] Under the current universal system, states make decisions relating to the designation of ETCs, but the federal USF picks up the tab. Understandably, therefore, an incentive has existed for states to designate additional ETCs in order to increase the flow of monies into the state. Exacerbating this situation is the fact that some states have not placed stringent service requirements on ETCs. Competitive LECs have received ETC status, but primarily serve low-cost customers in the towns and cities. Because these competitive LECs serve low-cost areas yet receive support based on the incumbent LEC's costs that include high-cost areas, these competitive ETCs often profit at the expense of the nation's ratepayers.

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[60] *Id.*, para. 89.

The Nebraska Companies propose that more accountability be brought into the ETC designation and annual Section 254(e) certification process. In the Nebraska Companies' view, a starting place for such new requirements is the actual facilities-provisioning thresholds that any ETC must objectively meet in order to be designated an ETC. Specifically, an ETC should actually be capable of providing service to a high percentage of customers at the time of its ETC designation through its own facilities.

Thus, as a starting point, the Nebraska Companies submit that provision of service to an area for a period of two years is a pre-condition to seeking ETC status. This two-year period ties to the regulatory lag in the current federal HCL reporting and disbursement process**,** and ensures that payments track with investments that were actually deployed.[61] Moreover, the Commission should also ensure that the deployed facilities requirement is sufficiently rigorous to ensure that only those with a commitment to the area being served are certified as ETCs. Thus, only those carriers with Carrier-of-Last-Resort responsibilities or those that serve a vast majority of the customers in an area should be designated as an ETC.

The Nebraska Companies respectfully submit that these initial thresholds will bring discipline into the ETC designation process and will ensure that only those entities that are irrefutably committed to serve an entire rural service area are being designated as ETCs. If these provisions were implemented in Commission rules, along with one of the matching proposals described previously, states would be motivated to exercise fiscal discipline in the designation of ETCs.

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[61] *See,* 47 C.F.R. § 36.611.

D. The Commission Should Establish a Single Revenue Benchmark for All Customers.

It is also important that in working with the states, that appropriate revenue benchmarks are established by the Commission. A revenue benchmark set too low will penalize states that have already undertaken intercarrier compensation reform. The Nebraska Companies' residential local exchange rate benchmark is $19.95 per line per month, exclusive of federal subscriber line charges ("SLCs") and the state USF surcharge.[62] The Nebraska Companies propose that the revenue benchmark should include local service, subscriber line charges, per line intrastate universal service surcharges and mandatory extended area and TRS charges. Intrastate universal service surcharges should be included in order to equalize customers' actual financial contributions nationwide. In states with state funds, the state surcharge would count toward the benchmark level. Thus, local rates could be lower in states with funds vis-à-vis other states and still reach the benchmark level. If the benchmark level is set too low, however, the inclusion of the state surcharge in the benchmark has no effect.

The Commission also seeks comment on whether there should be separate residential and business benchmarks.[63] Given that the practice of charging business customers more in order to subsidize residential customers cannot be sustained in a competitive environment, it is reasonable to only establish one benchmark and have it apply to both residential and business customers.

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[62] See, *NPRM.*, para. 575, n. 864.

[63] *Id.*, para. 578.

E. Prior to Calculation of Universal Service Funding Draws, Carriers Should Be Required to Increase SLCs to the Cap or Impute SLC Revenues at the Cap.

The Commission seeks comment on how SLCs play a part in increasing end-user charges.[64] Specifically, the Commission asks whether it should require carriers to set each SLC at its respective cap before allowing recovery through other sources, such as federal universal service funds. The Nebraska Companies understand this proposal to mean that were a company to have costs that result in a lower SLC than the appropriate cap, the difference between the SLC cap and the tariff rate would be an offset to any federal USF support. Since the amount of federal funding is limited, the Nebraska Companies submit that equity dictates that all customers should pay their fair share in order to free up additional federal USF dollars for disbursement. Thus, the Nebraska Companies support the proposition that carriers should be required to increase SLCs to the cap or the Commission should impute SLC revenue at the cap, and have this additional revenue used as an offset to a carrier's federal USF draw.

Likewise, the Commission also seeks comment on whether the SLC caps should be raised. The Nebraska Companies respectfully submit that the concept of any mandatory increase in SLCs should be made in conjunction with customers' existing local rate level in order to avoid unfairly discriminating against customers paying high rates and the companies that serve these customers. For states that have already undertaken the difficult task of increasing customers' local rate levels in an effort to minimize the universal service burden, such an SLC increase could make customers' rates unaffordable and would be inconsistent with the policy of comparability of rates. Changes in SLC rates can be used as a mechanism to increase end-user

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[64] *Id.*, para. 580.

charges, but SLC increases should only be required for those carriers with lower than average local rates.

F. The Commission Should Work to Ensure Each State Has a Sufficient Contribution Base.

In order for state universal service funds to remain viable, such funds must have a sustainable assessment base. Currently, the federal USF can assess interstate revenues, while state funds can assess intrastate revenues. Such intrastate revenues include customers' local charges, such as local service and calling features, as well as intrastate toll charges and an intrastate "safe harbor" on wireless and VoIP charges. When and if the network becomes entirely IP-based, circuit-switched charges, such as local service and toll, may become vestiges of the past, with broadband providing the end-user customer with a VoIP application. As such, it is appropriate that regulators should plan for this eventuality.

Since the Commission has previously declared broadband used for Internet services to be jurisdictionally 100% interstate,[65] states cannot assess revenues for the broadband Internet connection. In its recent nomadic VoIP order,[66] the Commission specifically permitted state assessment of interconnected nomadic VoIP provider service in that it specified an intrastate safe harbor percentage of 35.1%. Whether the intrastate contributions that result from assessment of nomadic VoIP will be sufficient to sustain state funds is unclear. Regardless, in the future the

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[65] *See In the Matter of GTS Telephone Operating Cos, GTOC Tariff No.1, GTOC Transmittal No. 1146, Memorandum Opinion and Order,* CC Docket No. 98-79, 13 FCC Rcd 22466 (1998).

[66] *See In the Matter of Universal Service Contribution Methodology, Petition of Nebraska Public Service Commission and Kansas Corporation Commission for Declaratory Ruling or, in the Alternative, Adoption of Rule Declaring that State Universal Service Funds May Assess Nomadic VoIP Intrastate Revenues, Declaratory Ruling*, WC Docket No. 06-122, FCC 10-185, released November 5, 2010.

intrastate safe harbor and states' funding obligations should be consistent. If the Commission desires to have states maintain funds in a broadband/Internet Protocol world, the Nebraska Companies submit that the Commission will need to ensure that states have a sufficient contribution base.

In order to provide this contribution base, the Nebraska Companies respectfully suggest that the Commission should consider calculation of a state's contribution on a per line basis rather than on a percentage assignment of costs to the interstate jurisdiction. While a percentage interstate allocation could be used, the Nebraska Companies do not believe that such an allocator is appropriate since a state may not have an adequate means for recovery of the costs assigned to the state jurisdiction, particularly in high-cost, small-population states where revenue sources upon which to base assessments are likely inadequate. A per line basis would also better address the concerns of a state with a small population because all states would be treated similarly by requiring each state raise funds proportional to the end-user revenues charged in the state.

VI. CONCLUSION

The Nebraska Companies respectfully request the Commission to carefully consider, adopt and incorporate, as appropriate, the positions set forth in the foregoing Comments into its efforts to implement the *NPRM*.

Rate-of-return regulation has been successful in deploying broadband services to many areas of rural America. The Federal-State Joint Board on Universal Service has agreed that rate-of-return has been successful and stated that "[u]nder this system, rural LECs (RLECs) have done a commendable job of providing broadband to nearly all their customers. While this program may need adjustments, we recognize its effectiveness in maintaining an essential

network for providers-of-last-resort ("POLRs") and in deploying broadband."[67] The current network is transitioning to an IP network and it provides not only excellent voice service but also broadband services in many areas of rural America.

The Nebraska Companies understand that the Commission recognizes that rate-of-return has been successful in delivering broadband to many rural areas; however, the Nebraska Companies also understand that the Commission has concerns about this regulatory methodology. In these Comments the Nebraska Companies have proposed specific parameters for rate-of-return regulation to address the Commission's concerns while preserving the fundamental regulatory method that has so successfully resulted in the deployment of broadband in some of the highest cost and lowest density areas of this country.

The Nebraska Companies request the Commission to maintain rate-of-return regulation as discussed above. In so doing, the Commission will evolve the regulatory regime that has resulted in substantial rural broadband deployment rather than placing at risk that which has been accomplished to date.

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[67] Federal-State Joint Board on Universal Service Recommended Decision, *In the Matter of High-Cost Universal Service Support Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, para. 30 (rel. Nov. 20, 2007).

Dated: April 18, 2011.

Respectfully submitted,

Arlington Telephone Company, The Blair Telephone Company, Cambridge Telephone Company, Clarks Telecommunications Co., Consolidated Telephone Company, Consolidated Telco, Inc., Consolidated Telecom, Inc., The Curtis Telephone Company, Eastern Nebraska Telephone Company, Great Plains Communications, Inc., Hamilton Telephone Company, Hartington Telecommunications Co., Inc., Hershey Cooperative Telephone Co., K. & M. Telephone Company, Inc., The Nebraska Central Telephone Company, Northeast Nebraska Telephone Company, Rock County Telephone Company, Stanton Telecom, Inc., and Three River Telco

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APPENDIX A

Nebraska Companies' Capital Expenditure Study, *Predicting the Cost of Fiber to the Premise*[68]

A. Engineering Estimates of Fiber-To-The-Premise Construction Costs Was Used for the Regression Analysis.

The data used in the *Nebraska Companies' CapEx Study* was obtained from engineering cost estimates of actual Fiber To The Premises ("FTTP") construction projects. Since the cost of constructing a given distance of cable varies greatly between towns and rural areas, the "town" and "rural" areas were generally separately identified. The resulting database contained 229 rural and 211 town areas, in 15 states located primarily in the upper-central states and southeast, served by 63 incumbent LECs. The data included 54,000 route miles of mainline and drop cable amounting to $1.103 billion of estimated construction costs.

All costs related to deploying FTTP to all locations[69] in the relevant geographic area were included in the estimates. These costs include installation labor, engineering fees, materials, electronics and cable plant.[70] Generally, the engineering estimates assumed reuse of all existing

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[68] *Predicting the Cost of Fiber to the Premise,* Nebraska Rural Independent Companies' Capital Expenditure Study, ex parte filed January 7, 2011. *In the Matter of Connect America Fund, WC Docket No. 10-90. A National Broadband Plan for Our Future, GN Docket No. 09-51, and High-Cost Universal Service Support, WC Docket No. 05-337.*

[69] A location could represent a home, business or multi dwelling unit. Although each location could have more than one subscriber, in most cases, a location corresponded to a single subscriber.

[70] *Id.,* pgs. 3-6.

assets except the local loop.[71] The cost estimates reflected current engineering standards and cost factors at the time the estimates were made, within the period from 2004 to 2010.

B. Public Variables Were Substituted as a Proxy for Engineering Data.

The cost data were analyzed and regressed against a variety of publicly available geographic and demographic variables. The cost of the engineering estimate was expected to be related to the area served, the number of locations, and the mainline cable route miles. Therefore, this data were obtained for each of the engineering estimates. Similar data was derived from various GIS data sources. These GIS data served as proxies for variables reported in the engineering data.

To obtain the GIS data, a multiple step process was undertaken. First, the area of the exchange was estimated from the compiled digital boundaries associated with each engineering record. Second, the number of households was estimated using census data. If the geographic centroid of a census block fell within the exchange area boundary, all of the census block's households were attributed to the exchange area. Conversely, if the geographic centroid of the census block fell outside the exchange area, no households were attributed to the exchange area. Finally, cable route miles were estimated based on the road miles within the area. Since customers generally live along roads and cable is normally constructed in public road right-of-ways, road mileage appeared to be a good proxy for cable route miles. The road miles in census blocks without households were excluded.

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[71] *Id.,* pg. 2.

C. The Public Data Variables Were Compared to the Engineering Variables to Ensure Accuracy.

The engineering data was compared to the GIS data to ensure accuracy. When these data did not agree, a geographic error or mismatch appeared likely. Mismatches could occur for several reasons. First, public data sources were used to identify exchange boundaries. If the area calculated from public sources did not accurately match the engineering area, the number of households or the cable miles within the area are unlikely to be accurate either. Second, at the time of the *Nebraska Companies' CapEx Study*, the most recent census data was from year 2000. The engineering data reflected actual locations at the time of the estimate, which reflected population increases or decreases since the last census. Finally, since cable constructed to customer locations does not require construction on all roads within a given area, the match between the calculated engineering cable miles did not always correspond to the road miles. The table below illustrates the comparisons between engineering and public variables.

Criteria	Known Data from Engineering	Public Variable
Area	Measured from maps	Calculated from Public Sources such as PUC or telecommunications association records
Subscriber Location	Counted from maps	2000 Census Households
Mainline Route Miles	Measured from maps	GIS Produced Road Miles

In an effort to isolate projects for which the GIS data did not accurately reflect the engineering data, the analysts established a system of quality control "gates" to exclude cases where a geographic error or mismatch seemed likely. The upper and lower limits chosen for the gates were somewhat arbitrary. Since the area gate provided an initial indication whether the data was representative, "tighter" limits, 10% higher or lower, were chosen. The other gate

limits were chosen to be 20% higher or lower than the mean because problems could be associated with using census-variable estimation. The gates worked as follows:

1. To apply the "area gate," the exchange area determined from the GIS data was divided by the exchange area from the engineering data. If this ratio was between 90% and 110%, then the data was allowed to pass through the gate. Of the 436 records, 391 passed through the area gate. If data successfully passed through the area gate, a location gate was tested.

2. To apply the location gate, the Census households were divided by the number of locations in the engineering data. If this ratio was between 70% and 110%, then the data was considered conditionally valid. This gate was intended to exclude cases that have a large error arising from the centroid approximation, the age of the Census data or from some other cause. Of the 391 records that passed through the area gate, 269 passed through the location gate.

3. For data that successfully passed the first two gates, a mileage gate was tested. If the ratio of the GIS road miles to the construction route miles from the engineering data was less than 80% or more than 120%, the data was excluded. This gate was intended to exclude data that have a large error arising from the road estimation process or from some other undiagnosed cause.

A data point was only used if it successfully passed through all three quality control gates. Of the 436 original data points, 168 records passed all three gates. One data point was removed as being extraneous, leaving 167 records.[72]

D. Addition GIS Variables Thought to Contribute to Construction Cost Were Added to the Data Set.

In addition to the area served, number of locations and cable miles, other variables such as terrain, climate, and the number of obstructions were thought to be related to construction cost. For each engineering project, GIS data from public sources was obtained that reflected these variables. Specifically, the supplemental GIS data included Soils Texture, Bedrock

[72] *Id.,* pgs. 6-9.

Percentage, Road Intersections Frequency, Stream Crossings Frequency, Wetlands Percentage, Frost Index, and Rain Frequency. The GIS data was weighted to reflect the area under study.[73]

E. The Regression Study Showed that Linear Density Was a Predominant Factor in Construction Cost.

Using the public variables as independent variables and inflation-adjusted construction cost per household[74] as the dependent variable, regression analyses were performed. Preliminary analysis of the data showed that linear density, households per road mile, is a strong predictor of cost. Other GIS variables were also considered as potential supplemental cost drivers. The analysis was tested to determine if the reliability of the cost predictions could be improved by adding the following variables one by one to linear density: Households, Frost Index, Wetlands Percentage, Soils Texture, Road Intersections Frequency, and Bedrock Percentage. If the additional variable increased the r-squared of the equation and the variable had a t-statistic greater than 2.0 or less than minus 2.0, the variable was added.

After testing each variable individually, a multivariate regression was conducted. In this analysis, a variable was included only if its inclusion increased the r-squared of the equation, the sign of its coefficient was as expected, and the variable's t-statistic was 1.28 or larger which indicates that the variable is significant at the 90% confidence level. Except for Soils Texture and Bedrock Percentage, the same variables that were significant when added to an equation with just linear density were significant in the multivariate regression as well. Although Soils Texture and Bedrock Percentage were significant when only one was included in the regression,

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[73] *Id.*, pgs. 9-11.

[74] The Consumer Price Index was applied to the cost data to adjust costs to a 2010 price level.

neither was significant when both variables were included in the multivariate analysis. Soils Texture was selected as the preferred variable, although using Bedrock Percentage would have been equally valid, as both raised the r-squared to approximately the same level, and both had t-statistics of approximately equal value.[75]

F. 86% of the Variation in the Cost of Constructing FTTP Facilities Can Be Explained by the Regression Equation.

Based on the data that passed through all three gates, the best regression equation the analysts obtained was as follows:[76]

> *Cost/Household = A + [B/(Households/Adjusted Road Miles)] + [C*Households] + [D*Frost Index] + [E*Wetlands %] + [F*Soils Texture] + [G*Road Intersections Frequency]*

Multi-Factor Regression Coefficients:

Factor	Coefficient Symbol	Coefficient	T-statistic
Fixed cost	A	$3,072	Not applicable
Linear Density	B	$13,365	18.96
Households	C	-$0.8867	-2.10
Frost Index	D	$25.04	3.61
Wetlands Pct.	E	$17,700	1.38
Soils Texture	F	$1,376	1.49
Road Intersections Frequency	G	$165.40	2.46

The r-squared of the seven-term regression was 0.86, meaning that if the regression variables are known for a particular area, 86% of the variation in the cost of constructing FTTP facilities can be explained. Because the predictive power of the equation was so high, the Nebraska

[75] *Id.*, pgs. 11-18.

[76] *Id.*, pg. 18.

Companies concluded that the study would be useful to the Commission in developing a mathematically supported upper limit on "safe harbor" capital expenditures. Such an analysis could also be used as a means to moderate the pace of investment to not unduly place demand on the Universal Service Fund. Finally, if the data set were expanded, the analysis could be used to estimate the cost of deploying high-capacity terrestrial broadband networks nationwide.

APPENDIX B

Formulas for State Matching Programs

Definitions

The policy of state matching funds can be depicted by a series of equations. Assume the following parameters:

$X per location	= Maximum amount of state funding per location
$W per location	= Federal contribution related to state matching Programs
$Z per location	= Minimum amount of state funding per location before matching funds are provided
Y%	= Federal contributions per dollar of State contribution

In the example outlined in the text, $X = $10, $Z = $4 and Y% = 65%. The Commission will set the values of X, Y and Z.

Federal Contribution as a Function of State Effort

The amount of federal contribution depends on the State Effort per line as shown in the following formulas:

$$\text{State Effort per Line} = \sum \text{State Contributions} \div \sum \text{State Lines}$$

The federal jurisdiction does not provide matching funding if the state does not provide at least $Z per line:

$$\text{If } 0 \leq \text{State Effort per Line} \leq Z, \text{ then } W = \$0$$

If the State Effort is not above the maximum of $X per line, the federal jurisdiction matches Y% of the State Effort above $Z per line:

$$\text{If } Z \leq \text{State } \textit{Effort per Line} \leq X, \text{ then } W = \text{Y\%} \times (\text{State Effort per Line} - \text{Z})$$

If the State Effort is equal to the maximum of $X per line, the federal jurisdiction matches Y% of the State Effort up to $X per line, then provides all of the funding above $X per line:

$$\text{If State } \textit{Effort per Line} = X, \text{ then } W = \text{Y\%} \times (\text{X} - \text{Z}) + 100\% \times \left[\left(\sum_{i=1}^{i=\text{All LECs in State}} \text{RRQ}_i \div \text{Lines}_i\right) - \text{X}\right]$$

Federal Matching Program

If a LEC is earning at its authorized level, federal support makes up the difference between a carrier's regulated costs[77] and its revenues. Benchmark revenue[78] represents *potential* per line charges to customers, although the company for competitive or other reasons may choose not to charge the benchmark rate. State base support is the existing state fund, if any, unrelated to the federal matching program. ICC revenue is the amount a company receives in access charges, reciprocal compensation, and settlements. Other regulated revenue represents ancillary charges, such as calling feature revenues, not included in the other terms of the equation.

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[77] Actual, regulated unseparated loop costs, derived from the carriers' books, for telecommunications and broadband Internet. *Costs* should also cover all broadband transmission costs from the end user to the Internet backbone. Some categories of investment or expense could be constrained.

[78] Revenue benchmarks are based on, and comparable to, actual revenues from urban subscribers for voice and broadband. To ensure that all states and customers are treated equitably, a federal benchmark, which includes local service, subscriber line charges, per line intrastate universal service surcharges, and mandatory extended area charges, would be imputed prior to the payment of replacement mechanism support.

$$Cost\ per\ Line_{LEC} = Regulated\ Revenue\ per\ Line_{LEC} = ICC\ Revenue\ per\ Line_{LEC} + Other\ regulated\ Revenue\ per\ Line_{LEC} + Federal\ Support\ per\ Line_{LEC} + State\ Base\ Support\ per\ Line_{LEC} + Benchmark\ Rate_{LEC}$$

Solving for Federal Support, yields the following equation:

$$Federal\ Support\ per\ Line_{LEC} = Cost\ per\ Line_{LEC} - ICC\ Revenue\ per\ Line_{LEC} - Other\ Regulated\ Revenue\ per\ Line_{LEC} - State\ Base\ Support\ per\ Line_{LEC} - Benchmark\ Rate_{LEC}$$

Assume that carriers in a state can receive their full amount of federal support only if the state raises and spends a meaningful amount through state universal service funding and reforms ICC compensation. Thus, subtracting federal matching funds from the above equation yields:

$$Federal\ Support\ per\ Line_{LEC} - Federal\ Match\ per\ Line_{LEC} = Cost\ per\ Line_{LEC} - ICC\ Revenue\ per\ Line_{LEC} - Other\ Regulated\ Revenue\ per\ Line_{LEC} - State\ Base\ Support\ per\ Line_{LEC} - Benchmark\ Rate_{LEC} - Federal\ Match\ per\ Line_{LEC}$$

Renaming the original federal support less the federal match as Adjusted Federal Support, results in the following equation:

$$Adjusted\ Federal\ Support\ per\ Line_{LEC} = Cost\ per\ Line_{LEC} - ICC\ Revenue\ per\ Line_{LEC} - Other\ Regulated\ Revenue\ per\ Line_{LEC} - State\ Base\ Support\ per\ Line_{LEC} - Benchmark\ Rate_{LEC} - Federal\ Match\ per\ Line_{LEC}$$

Moving all federal funding to one side of the equation yields:

$$Adjusted\ Federal\ Support\ per\ Line_{LEC} + Federal\ Match\ per\ Line_{LEC} = cost\ per\ Line_{LEC} - ICC\ Revenue\ per\ Line_{LEC} - Other\ Regulated\ Revenue\ per\ Line_{LEC} - State\ Base\ Support\ per\ Line_{LEC} - Benchmark\ Rate_{LEC}$$

By withholding a portion of federal support, the amount that must be paid by end users is increased, thus there is a higher effective benchmark rate. If there is not a state fund or an insufficiently sized fund, the federal match term is zero, which necessitates a higher benchmark. If a state creates a fund, which causes the Federal Match per Line term to be positive, a lower benchmark will be needed; thus, the state "buys down" the benchmark.

Constraints on the Size of the Connect America Fund

If the Connect America Fund will be used to support the state matching program and other federal universal service needs, the following formula results:

$$\text{Connect America Fund} = \sum_{i=1}^{i=\text{All States}} \text{Federal Support}_{\text{State } i} + \sum_{i=1}^{i=\text{All States}} \text{Federal Match}_{\text{State } i}$$

Given this constraint, the amount of federal match money available and the resulting benchmark rate can be determined.